

STAT

Approved For Release 2003/01/28 : CIA-RDP78B04747A002900040087-2

Ref: 552-0D-176

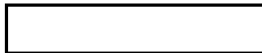
27 March 1964

STAT



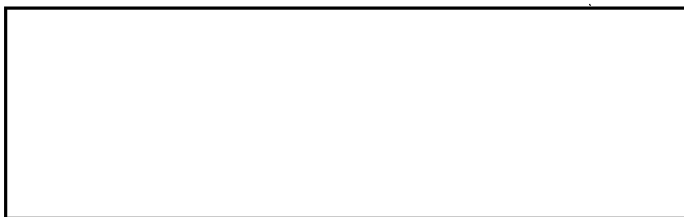
Project 552

Gentlemen:

Enclosed are three (3) copies of  Progress Report on Project 552 for the period from February through 26 March 1964.

STAT

Very truly yours,



STAT

President

ARB/de

Encl: (3) Progress Reports - 7 pp.

Declass Review by
NIMA/DOD

PROGRESS REPORT

For

VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

Period Covered: February 1964

Dated: 26 March 1964

Job No.: 552

Document No.: OD-174

26 March 1964

PROGRESS REPORT

For

VERSATILE, HIGH PRECISION STEREO
POINT TRANSFER DEVICE

This report covers the progress and work performed on subject viewer for the month of February 1964.

GENERAL

Engineering and design is approximately 90% complete, the major exceptions being the high intensity light source and control panel and consoles, together with eyepiece angular adjustment and superstructure fold away support.

Manufactured parts are approximately 80% complete. Subassembly work has started.

Major subassemblies will be started in late April. Final system assembly will start in mid June. Final system check out is scheduled for the end of July.

Tremendous effort has been and continues to be expended, not only upon reducing critical lead times, but also upon maximizing the performance of all system and operator functions. In order to meet the tight assembly schedules and minimize final debugging time, continuous monitoring of vendors and suppliers, tight quality controls, together with functional lab testing of critical components is being enforced. Major and minor discrepancies that could cause problems and difficulties are, therefore, being discovered and corrected, prior to the critical sub and final assembly.

26 March 1964

Special controls have been set up to follow every part through manufacturing, stores and assembly. Critical deliveries of lenses, mirrors, and special optics are receiving special emphasis; likewise, standard parts and hardware are under continuous surveillance.

OBJECTIVE

Subassembly work on Geneva drives, and image enhancers was started. Parts and components for other subassemblies such as cable mounting, image rotation, reticle projection, mirror mountings, turret indexing and zoom optics are being readied for assembly.

EYEPIECE

Preliminary design layouts were started on articulated joint to determine the feasibility of incorporating this design in the present eyepiece housing. Subassembly work was started on Viewing Mode Mirror Slide mechanisms. Parts and components are being readied for additional subassembly work so that long lead items such as mirrors, prisms and lens cells can be installed at a later date without affecting overall system assembly schedule.

SUPERSTRUCTURE EYEPIECE SUPPORT

Additional design work was undertaken to further simplify the task of adjusting the eyepiece housing for the purpose of accommodating various operators, and also providing a retract storage position for passing through a thirty-five (35") inch doorway. The design goal is for a simplified push-pull slide mechanism which will also provide a smoother and cleaner appearing viewer system.

BASE FRAME

Initial inspection results were very gratifying. This stable precision machined casting will eliminate many maintenance and calibration problems in the field. Secondary machine operations, as well as painting of this base will be done in-house to facilitate overall assembly work.

CARRIAGES

X and Y carriage castings were inspected. Finish machining is scheduled for mid April.

LEAD SCREWS

Delivery is now promised for late April.

LIGHT TABLECastings, Light Box Frame

Castings received, inspected, readied for final machining. Certain modifications will have to be made to incorporate the travelling light source. However, these should be complete late April.

Film Drive

Gear box clutch drives and film roller sub-assemblies are about complete and waiting for assembly on light box.

Vacuum Manifolds

Will be released for manufacture mid April.

26 March 1964

Vacuum Platten Glass

Special effort has been devoted to obtain plattens with highly polished grid lines to minimize effect of grid lines hiding bits of photo data. Laboratory samples have been excellent. Certain plattens will be delivered by late March, and will be checked for functional holddown performance, as well as for line quality before final manufacturing is approved.

General Illumination

Viewer lamp banks and control received and ready for inspection.

HIGH INTENSITY LIGHT SOURCE

Extensive laboratory tests and component evaluation was continued in order to optimize this light source. Due to the wide field of view at lower power magnification, together with inherent light losses in fiber optics, beam splitters and the small aperture of the zoom optics, a high wattage lamp would be required. In order to avoid high wattage lamp and resulting excessive temperature rises at the film plane, special efforts have been made to employ lower wattage lamps fitted with elliptical reflectors, heat absorbing mirrors, directional lenses and special diffusing surfaces. Lab mock up test results have proven their feasibility. New and modified finalized drawings will be released after mechanical and space parameters are resolved. Certain long lead items have been ordered.

PAINT AND FINISH

All internal optical housings will receive flat black finishes; internal surfaces of light boxes and appropriate interior illumination reflecting surfaces will be finished in white. Hidden structural castings will also be painted white to minimize heat absorbing surfaces as well as to promote good housekeeping when servicing and maintaining equipment.

Exterior surface will be finished in gray hammertone.

MAIN CONSOLE

The main viewer console closure is complete with the exception of the fold up writing top which contains the joy stick and miscellaneous function controls. This table top will be released shortly after control locations are finalized.

CONTROL PANEL

In order to maximize system performance, and ease the operators task, certain control functions will be relocated to the left of the operator. Thus, while the operator views photo data through the eyepieces his right hand can manipulate the X-Y carriage joy stick; his left hand can adjust the optical, illumination and miscellaneous controls. Control functions will be grouped so that the operator can quickly orient himself by a sense of touch or feel. Release of control panel was postponed to take advantage of the foregoing human engineering improvement.

ELECTRICAL SCHEMATICS - WIRE DRAWINGS

Work was continued on schematics and pre-wiring drawings; cabling was started.

26 March 1964

JOY STICK

After careful evaluation of various joy stick types and functional controls, it has been decided that the standard 387 joy stick will be employed in order to avoid a change in the scope of the original contract. Hardware scrappage - new joy sticks, additional relays, and extra electrical wiring would more than double the cost of the proposed joy stick.

ELECTRONIC CONTROL CONSOLES

Standard consoles and components were purchased. Packaging design work was continued with emphasis placed on accessibility for ease of maintenance.

OPERATOR'S CONTROL CONSOLE

As explained above, the control panel will be located to the left of the operator. The console will contain the necessary panel controls, as well as the X-Y and film drive power supplies relay banks and all components associated with operation of the viewer with the exception of the vacuum pump and miscellaneous controls which will be supplied in a second free standing console.

FREE STANDING CONSOLE

The vacuum pump will be located in the bottom of this console. Shock vibration and noise isolation provisions will be made. Space is available for miscellaneous control components.

26 March 1964

Work to be Completed During Next Reporting Period

1. Continue design and detailing on control panels consoles, superstructure, articulated eyepiece joint, and miscellaneous minor items.
2. Continue checking and finalizing major assembly drawings.
3. Continue work on miscellaneous overall system assembly drawings.
4. Continue subassembly work.
5. Continue design of high intensity projection source hardware.
6. Continue component subassembly check and test.
7. Continue preparation of alignment and test procedures.
8. Continue to monitor all phases of program.